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ABSTRACT

Successful reading comprehension lessons given to primary grade children seem to incorporate the following four elements: (1) Two-thirds of lesson time is spent on the direct instruction of comprehension. (2) The major teaching strategy used is one in which the children's background knowledge of the text is explored first, before the text is read (experience-text-relationship method). (3) Questions are asked at a variety of levels, ranging from factual and literal to interpretive and critical. (4) Instruction is responsive, with the teacher's questions growing out of the preceding responses of the children. When the lessons of a teacher whose instruction incorporated all of these features were compared to those of one whose instruction showed only the third and fourth features, it was found, with minor exceptions, that the level of student achievement-related behaviors was much higher in the lessons of the first teacher than in those of the second. (Author/RL)

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The Comprehension-Oriented Reading Lesson: Relationships to Proximal Indices of Achievement

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Strong evidence supports the contention that the reading program developed at the Kamehameha Early Education Program (KEEP) is an effective one (Tharp, 1980). But while it incorporates many characteristics of instruction also found effective in other settings (Sloat, 1980), it seems to differ in one notable respect, and that is in its emphasis on comprehension. In this paper I want to focus in particular on the teacher-directed small group lessons which have as their primary purpose the development of the children's skill in reading comprehension. I will list what we believe to be the four key features of these lessons, and then show how these features may be related to the occurrence of student behaviors thought to lead to achievement.

What are these key features? First, two-thirds of the time in the reading lessons is spent on the direct instruction of comprehension. There are a number of specific teacher behaviors included in our operational definition of comprehension instruction (Hao & Au, in preparation), but generally this can be taken to mean that the teacher is engaging the children in discussion of the text or related topics two-thirds of the time. Second, the major teaching strategy used is one in which the children's background knowledge of the story topic is explored first, prior to beginning reading of the text itself. We call this teaching strategy the experience-text-relationship (ETR) method (Au, 1979, 1979). At the very beginning of the lesson, during the experience or E phase, the teacher asks the children questions designed to elicit from them background knowledge which may be important to an understanding of the story. For example, with a story entitled "Jasper Makes Music," one of our teachers began the lesson by asking what the term "make music" meant to the children, and they came up with

examples of making music from their own experiences. Another commonly used technique is for the teacher to present the children with just the title of the story, or to show them the first picture in the story, and to encourage them to guess what the story will be about. Because there are no right or wrong answers, the children participate freely, and are eager to open their books and begin reading by the time the lesson moves into the second kind of phase, the text or T phase. At this time the teacher has the children read the story silently, and the subsequent discussion focuses on the ideas presented in the text. Finally, in the relationship or R phase, the teacher tries to weave together the children's background knowledge and the information from the text.

The third feature of the reading lessons is that questions are asked at a variety of levels, ranging from factual and literal to interpretive and critical. The fourth, and final, key feature is that instruction is responsive; the teacher's questions are based on the preceding responses of the children. In other words, the teacher does not work from a set list of questions, one which she has prepared herself or found in the teachers guide, but adjusts her questions according to what the children are saying. Our teachers generally have a central theme or main idea they want to lead the children to, and their questions are formulated and reformulated in the course of the lesson, to reach this goal.

I will not discuss here the participation structures, or different patterns of teacher-pupil interaction, in the reading lessons, although these are also of considerable importance. Detailed analyses of social organizational and sociolinguistic characteristics of these lessons are available (Au, 1980a, 1980b).

Obviously, the use of each of these four features is not unique to the KEEP reading program. For example, reading educators will note the resemblence of the ETR method to the directed reading activity (DRA) proposed by Betts (1950) 30 years ago. But we think there are two ways in which we are unique, or very nearly so. The first is in our use of this particular combination of features, and the second is in our efforts to systematize and institutionalize their use. We know what we want to have happen, and we go to great pains to control the quality of these lessons, both in terms of teacher behavior and student achievement (Hao & Au, in preparation).

The purpose of the study to be described here was to find out whether links could be made between our students' daily participation in the comprehension-oriented lessons just described, and their improved performance on standardized achievement tests. The basic research strategy used was that of contrasting examples of KEEP comprehension lessons with non-examples. I had the same group of six Hawaiian second grade students (7 year olds) participate in two "example" lessons and two "non-example" lessons. I then compared the children's behavior in the two pairs of lessons, looking at both the videotapes and transcripts.

The logic followed is that developed by Fisher, et al. (1978) in the Beginning Teacher Evaluation Study, and hinges on the concept of the proximal index, or student behavior associated with academic achievement. The idea is simply that student behavior is more directly related to student achievement than teacher behavior; therefore, to determine whether a certain form of instruction may be contributing to students' learning, the students' behavior is that setting and not just that of the teacher must be examined closely.

The following proximal indices were selected for use in this study, on the basis of the results of recent field-based correlational studies and related experiments:

1) time engaged in reading,

2) student responses,

3) responses reflecting practice in reading skills,

4) appropriate or correct responses, and

5) ideas or content covered, as shown in student responses.

The children made up a homogeneous reading group, on the basis of criterion-referenced and standardized test scores, and ranked at about the middle of their class. They were typical of children at the KEEP school, dialect speakers from low income, urban families.

Teacher K, the KEEP teacher who provided the two examples of the KEEP reading lessons, was thoroughly trained in our method of direct comprehension instruction. The three classes she had worked with in the KEEP reading program had all scored significantly better that controls on standardized tests. Teacher N, the untrained teacher who provided the two non-example lessons, had the same amount of teaching experience and formal education as Teacher K, but had not been trained to teach reading comprehension in the KEEP fashion. Both teachers were intelligent, sensitive, and highly competent.

Neither teacher had taught the group of children in the study before. The only instructions given to the teachers was that their lessons should emphasize reading comprehension, and should be about 20 minutes long. They were given the stories to be used in the lessons (all of equivalent readability).

The two lessons of Teacher K and of Teacher N were similar in the third and fourth features cited, that is, both teachers asked questions at a variety of levels, and instruction was responsive. However, they differed on the first and second features. 1) Teacher N did not spend two-thirds of lesson time on the direct instruction of comprehension, because much of her lesson was devoted to having the children read aloud. Teacher K, on the other hand, used silent reading and spent almost all the rest of the time in asking the children questions about the story. 2) Teacher N did not use the children's background knowledge of the topic of the text as the basis for starting the lessons, while Teacher K did.

Now, how representative are the example lessons of the lessons we see in the KEEP classrooms every day, and the non-examples of the lessons which occur in other classrooms with Hawaiian children? In all the ways that we can measure, I can say that the lessons of Teacher K could have been given by any of our fully trained teachers. It seems likely that the lessons given by Teacher N are better than those given by most other teachers, according to the standard defined by the five key features. The lessons of Teacher N incorporated two of the five features, and we do not know whether these two features generally occur in lessons in other programs, although we would guess not.

RESULTS

Let's look now at measures of the children's academically productive behavior in the two sets of lessons. Reliability coefficients for all indices were .90 or better. The results clearly favor the KEEP form of direct comprehension instruction.

The first proximal index, reading engaged time, was a variety of academic engaged time measure. The purpose of using this index was to determine how much time the children spent practicing reading skills. Time engaged in academic tasks had repeatedly been shown to be a correlate of achievement (e.g., Fisher et al., 1978; Rosenshine and Berliner, 1978). The lessons were divided into 30-second intervals and the behavior of each child was coded separately from the videotapes. The results, presented in Table 1, show the percentage of intervals the children were judged to be reading engaged, in the two lessons of each teacher and for each teacher's lessons combined. The latter figures were obtained by summing the number of intervals engaged in each pair of lessons and dividing by the total number of intervals in both lessons. Much higher percentages of reading engagement are seen in the lessons of Teacher K than of Teacher N, 79.70% compared to 42.90%.

Insert Table 1 about here

The second proximal index involved the rate of student responses over the course of the lesson. A student response was defined as an unbroken turn of speaking. Coding was done using transcripts in combination with the videotapes. This index was used to gauge the pacing of the lesson, which should be brisk (Becker, 1977; Rosenshine, 1978), to allow for many responses by the children. As shown in Table 2, the results on this proximal index were substantially the same in the two teachers' lessons, 13.13 responses per minute in Teacher K's lessons and 11.65 responses per minute in Teacher N's lessons.

Insert Table 2 about here

The third proximal index, reading and reading related responses, had to do with the number of responses which reflected the practice of reading skills. Scoring was based on the transcripts. The greater the amount of practice, the better the children's achievement should be (cf. Becker, 1977). Examples of reading responses are answers to a question about the story, statements about a personal expereince directly related to the topic of the story, and reading aloud. These results are also presented as rates, as seen in Table 3. Although the students were equally talkative in both sets of lessons, differences in rate of reading responses were substantial. There were 10.08 reading responses per minute in Teacher K's lessons and only 5.80 reading responses per minute in Teacher N's lessons.

Insert Table 3 about here

The fourth proximal index was appropriate or correct responses. This measure was designed to assess the amount of successful practice in reading skills the children received, in keeping with the findings of Brophy and Evertson (1976). It would be expected that the greater the amount of successful practice, the better the students' learning. These results are shown in Table 4, again as rates. A much higher rate of correct responses, or successful practice, occurred during the lessons of Teacher K than during those of Teacher N, 9.13 per minute versus 5.00 per minute.

Insert Table 4 about here

The fifth proximal index was amount of content covered, here defined in terms of the idea units present in the children's speech. Basically, as idea unit is a segment of text containing a single thought or idea, or modifying an earlier idea. The methodology is adapted from that used in cognitive psychological experiments (e.g., Anderson and Ortony, 1975; Anderson, Reynolds, Schallert, and Goetz, 1977). The more content covered the greater the potential learning (e.g., Good, Grouws, and Beckerman, 1978). As shown in Table 5, the rate at which idea units of all kinds occurred in the two teachers' lessons was very much the same, 5.56 per minute in the lessons of Teacher K and 5.27 per minute in the lessons of Teacher N.

Insert Table 5 about here

However, differences become evident if we subtract idea units present because the children were reading aloud. The results in Table 6 are for idea units verbalized by the children as part of discussion, and not simply in reading aloud. It seems reasonable to assume that presenting an idea unit in discussion requires a qualitatively different kind of cognitive processing from reading it aloud, and that the former is more likely to be related to the development of competence in reading comprehension. In this analysis the children were shown to discuss many more idea units in the lessons of Teacher K than N, 5.28 per minute as opposed to 1.51 per minute.

Insert Table 6 about here

As transcripts of the lessons were being analyzed, it became evident that the children's behavior also differed substantially in another way, between the two pairs of lessons. A measure of logical inferences, which we take to be reasonable extensions of facts in the text, was developed in an attempt to capture this dimension of difference. To be classified as a logical inference, a response had to be a spontaneous insight, not cued by the teacher. It also had to be text-based and demonstrate aspects of the child's understanding of the story. As shown in Table 7, logical inferences were far more frequent in the lessons of Teacher K than in those of Teacher N (0.87 per minute versus 0.33 per minute). This is exactly the type of difference to be expected if lessons involving the direct instruction of reading comprehension are contrasted with those which do not incorporate effective comprehension instruction.

Insert Table 7 about here

DISCUSSION

The results on indices of reading engaged time, reading responses, correct responses, content covered in discussion, and logical inferences were all higher in the lessons of Teacher K, who used the KEEP form of comprehension instruction, than in those of Teacher N, who did not. The only indices which did not show differences between the lessons of the two

teachers were those measuring student responses of all kinds and idea units of all kinds. The first negative result may be explained on the assumption that it is not just amount of student talk which is positively related to achievement, but the quality of student talk, for example whether there is a high rate of responses reflecting practice in reading, or a high rate of correct responses. The second negative result may be attributed to the fact that Teacher N had the children read aloud, while Teacher K had them read silently. On the basis of the differences seen in the proximal index data, we can conclude that the form of direct comprehension instruction used in the KEEP reading program does seem likely to be positively related to students' learning. Of course, we can speak only in terms of correlation, and not causation.

How do the results reported here tie in with the characteristics of effective teaching identified elsewhere? First, there were clearly a number of effective characteristics found in both teachers' lessons. The lessons were alike in that the teachers and not the students chose the activities. Both teachers attempted to maintain a positive atmosphere, Teacher K by encouraging the children to share their ideas, and Teacher N by praising the children. Both teachers used a variety of questions, higher as well as lower order, and both sets of lessons showed a high proportion of correct to incorrect responses, although the rate of correct responses was much higher in Teacher K's lessons. These, then, appear to be necessary but not sufficient conditions.

But there were also important differences between the two sets of lessons. In Teacher K's lessons the children's attention was clearly focused on academics, with instruction proceeding quite rapidly. These lessons, but not those of Teacher N, showed both a high percentage of time engaged in

reading and a high rate of responses reflecting practice in reading skills. Time spent on productive activities was maximized in Teacher K's lessons, but not in Teacher N's.

These differences in the degree of academic or reading engaged time and cognitive focus may be related to the following two differences in teaching practices used by Teacher K, but not by Teacher N. 1) Teacher K devoted at least two-thirds of lesson time to the direct instruction of comprehension, with silent reading and not reading aloud. 2) Teacher K used the children's background knowledge of the topic of the story as the starting point for reading comprehension lessons. These two features of the direct instruction of comprehension in the KEEP reading program, time spent in comprehension instruction and development of the experiential base, seem particularly important.

At this point, we are left with an interesting question. Would these two features also be important in the reading comprehension instruction of children from minority groups other than Hawaiian? It seems, in seeking to develop effective reading programs for children of different minority groups, that we should differentiate those program features which are likely to be effective in a large variety of settings from those which are likely to represent specific adaptations to the characteristics of a particular group. Exactly how the two features discussed above fit into the total picture seems a fruitful topic for future research.

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Table 1

Percentage of intervals the children were engaged in reading.

	Teacher K	Teacher N
First Lesson	79.63	40.12
Second Lesson	79.76	46.18
Combined	79.70	42.90

Table 2

Mean number of student responses of all kinds per minute.

	Teacher K	Teacher N
First Lesson	15.45	11.16
Second Lesson	10.91	12.21
Combined	13.13	11.65

Table 3

Mean number of reading responses per minute.

	Teacher K	Teacher N
First Lesson	11.73	5.71
Second Lesson	8.49	5.87
Combined	10.08	5.80

Table 4

Mean number of correct responses per minute.

	Teacher K	Teacher N
First Lesson	10.43	5.05
Second Lesson	7.89	4.94
Combined	9.13	5.00

Table 5

Mean number of idea units per minute.

	Teacher K	Teacher N
First Lesson	5.38	6.16
Second Lesson	5.72	4.37
Combined	5.56	5.27

Table 6

Mean number of idea units in discussion, per minute.

	Teacher K	Teacher N
First Lesson	4.83	1.47
Second Lesson	5.72	1.54
Combined	5.28	1.51

Table 7

Mean number of logical inferences per minute.

	Teacher K	Teacher N
First Lesson	0.85	0.55
Second Lesson	0.89	0.11
Combined	0.87	0.33